

I claim:

1. A method of identifying problems in applications, comprising:

5 monitoring at a kernel level system resource usage of one or more running applications without modifying run-time environments of the running applications; and

identifying from the monitored system usage, an application whose system usage pattern satisfies a  
10 predetermined criteria associated with one or more problems.

2. The method of claim 1, wherein the system resource usage comprises one or more processes that the one or more  
15 running applications have spawned.

3. The method of claim 1, wherein the system resource usage comprises central processing unit usage of the one or more running applications.

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4. The method of claim 1, wherein the system resource usage comprises memory usage of the one or more running applications.

25 5. The method of claim 1, further comprising:  
producing an output comprising at least the system resource usage associated with each of the one or more running applications.

30 6. The method of claim 5, wherein the identifying comprises:

identifying from the output an application whose system resource usage pattern satisfies a predetermined criteria associated with one or more problems.

5           7. The method of claim 6, wherein the predetermined criteria is an increase in amount of the system resource usage from a first period to a second period.

10           8. The method of claim 6, wherein the predetermined criteria is a continuous increase in amount of the system resource usage from a first period to a second period.

            9. The method of claim 1, wherein the monitoring comprises:  
15           using an available kernel level tool to obtain data associated with the system resource usage.

            10. The method of claim 1, wherein the monitoring comprises:  
20           using an available kernel level tool to obtain data that includes the system resource usage; and  
            filtering the data to obtain a selected system resource usage.

25           11. The method of claim 10, wherein the identifying comprises at least:  
            using the filtered data to identify an application whose system resource usage pattern satisfies a predetermined criteria associated with one or more  
30           problems.

12. A method of identifying memory problems in applications, comprising:

monitoring at a kernel level memory usage of a running application without modifying a run-time environment of the

5 running application; and

producing an output comprising at least the memory usage.

13. The method of claim 12, further comprising:

10 analyzing the output to identify a memory problem.

14. A method of identifying memory problems in applications, comprising:

15 monitoring at a kernel level memory usage of one or more running applications without modifying run-time environments of the running applications;

producing an output comprising at least the memory usage of one or more running applications; and

20 identifying from the output, an application whose memory usage pattern satisfies a predetermined criteria associated with one or more memory problems.

15. A method of identifying memory problems in applications, comprising:

25 monitoring at a kernel level memory usage of one or more running applications without modifying run-time environments of the running applications; and

identifying from the monitored memory usage, an application whose memory usage pattern satisfies a  
30 predetermined criteria associated with one or more memory problems.

16. The method of claim 15, wherein the monitored memory usage comprises at least a stack memory, data memory, and text memory.

5        17. A method of identifying memory problems in applications, comprising:

collecting system resource usage at a kernel level of one or more running applications without modifying run-time environments of the running applications; and

10       identifying from the collected system resource usage, an application whose system resource usage pattern satisfies a predetermined criteria associated with one or more system resource usage problems.

15       18. A system for identifying problems in applications, comprising:

a data collection module operable to retrieve information about a running application at a kernel level; and

20       a data analysis module operable to determine from the retrieved information an abnormal system usage pattern in the information.

25       19. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps of identifying problems in applications, comprising:

monitoring at a kernel level system resource usage of one or more running applications without modifying run-time environments of the running applications; and

30       identifying from the monitored system usage, an application whose system usage pattern satisfies a

predetermined criteria associated with one or more problems.

20. The program storage device of claim 19, wherein  
5 the system resource usage is memory usage, CPU usage, or  
one or more spawned processes, or combinations thereof.